

What is claimed is:

1. A device for counting the number of micro particles, which comprises:

5 a sample chip wherein a sample containing particles may be located at a reading part;

a light source that projects light into a sub-area on the sample chip;

an object lens facing to the chip to magnify the image of the sample that is formed on the sub-area by the light illuminated from the light source;

10 an image photographing part that photographs the image of the sample, which is magnified by the object lens, in a sub-area on the sample chip;

a micro particle counting part that counts micro particles on the sub-area from the image photographed by the image photographing part; and

15 a chip shifter that shifts the position of the sample chip in order that a certain area adjacent to the area photographed just before is shifted to the point where the light is incident.

2. The device according to claim 1, wherein the chip shifter shifts the sample chip by a predetermined distance at every predetermined time interval, and the image photographing part subsequently photographs the image of a certain sub-area adjacent to the sub-area photographed just before as the sample chip is shifted.

3. The device according to claim 2, wherein the micro particle counting part counts micro particles in the sub-area successively photographed by the image photographing part, adds the number of micro particles in each sub-area together, and calculates the total number of micro particles in the samples; and then, calculates the average density of the micro particles from the total volume of the reading part of the sample chip and the total number of the micro particles.

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4. The device according to any one of the claims 1 to 3, further comprising an optical filter that passes the light with a specific wavelength among the light passing through the object lens.

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5. The device according to any one of claims 1 to 3, wherein the light source is selected from the group consisting of a halogen lamp, a xenon lamp, a mercury lamp, an LED, and a LASER.

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6. The device according to any one of claims 1 to 3, further comprising an incident light control lens controlling the amount of light emitted from the light source and the distance of focus, and illuminating on the sample chip.

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7. A device for counting the number of erythrocyte, which comprises:
a sample chip wherein a sample containing erythrocytes may be located at a reading part;

a lamp or an LED that projects light into a sub-area on the sample chip;

an object lens facing to the chip to magnify the image of the sample that is formed on the sub-area by the light illuminated from the lamp or the LED;

5 a CCD camera that photographs the image of the sample, which is magnified by the object lens, in a sub-area on the sample chip;

a micro particle counting part that counts erythrocytes on the sub-area from the image photographed by the CCD camera; and

10 a chip shifter that shifts the position of the sample chip in order that a certain area adjacent to the area photographed by the CCD camera just before is shifted to the point where the light is incident.

15 8. The device according to claim 7, wherein the chip shifter shifts the sample chip by a predetermined distance at every predetermined time interval, and the CCD camera subsequently photographs the image of a certain sub-area adjacent to the sub-area photographed just before as the sample chip is shifted.

20 9. The device according to claim 8, wherein the micro particle counting part counts erythrocytes in the sub-area successively photographed by the CCD camera, adds the number of erythrocytes in each sub-area together, and calculates the total number of the erythrocytes in the samples; and then, calculates the average density of the erythrocytes from the total volume of the reading part of the sample chip and the total number of the erythrocytes.

10. The device according to any one of claims 7 to 9, further comprising an optical filter that passes the light with a specific wavelength among the light passing through the object lens.

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11. The device according to any one of claims 7 to 9, further comprising an incident light control lens controlling the amount of light emitted from the light from the lamp or the LED and the distance of focus, and illuminating on the sample chip.

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12. A device for counting the number of cells with cell nucleus, which comprises:

a sample chip wherein a sample containing the cells and fluorescent dyeing reagent may be located at a reading part;

15 a LASER source that projects light into a sub-area at the sample chip;

an object lens facing to the chip to magnify the image of the sample that is formed on the sub-area by the light illuminated from the LASER source;

a CCD camera that photographs the image of the sample, which is magnified through the object lens, in a sub-area on the sample chip;

20 a micro particle counting part that counts the cells on the sub-area from the image photographed by the CCD camera; and

a chip shifter that shifts the position of the sample chip in order that a certain area adjacent to the area photographed by the CCD camera just before is shifted to the point where the light is incident.

13. The device according to claim 12, wherein the chip shifter shifts the sample chip by a predetermined distance at every predetermined time interval, and the CCD camera subsequently photographs the image of a certain sub-area adjacent to the sub-area photographed just before as the sample chip is shifted.

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14. The device according to claim 13, wherein the micro particle counting part counts cells in the sub-area successively photographed by the CCD camera, adds the number of cells in each sub-area together, and calculates the total number of the cells in the samples; and then, calculates the average density of the cells from the total volume of the reading part of the sample chip and the total number of the cells.

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15. The device according to any one of claims 12 to 14, further comprising an optical filter that passes the light with a specific wavelength among the light passing through the object lens.

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16. The device according to any one of claims 12 to 14, further comprising an incident light control lens controlling the amount of light emitted from the LASER source and the distance of focus, and illuminating on the sample chip.

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